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Title: Fabrication and tests of He-3 and H-2 targets for beam polarization measurement

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Abstract: He-3 and H-2 targets were fabricated through implantation of He-3 and H-2 ions in 0.2-0.3 mm thick tantalum and titanium foils. The energy of He-3 and H-2 ions was 45-100 and 78 keV, respectively. Ions beams with typical current of 90-300 μ A were used for implantation. Stability tests of He-3 and H-2 targets were carried out by monitoring the yield of He-3(d, p)He-4 and H-2(d, p)H-3 reactions. For the He-3 target, the reaction yield was stable for both tantalum and titanium foils but the most stabilized maximum yield was observed for the 100 keV tantalum target. In the case of H-2 targets, the yield increased with increasing total dose implanted on the target. (C) 2000 Elsevier Science Ltd. All rights reserved.